INVITATION FOR TENDER FOR SUPPLY OF EQUIPMENT

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for supply of the following equipment.

Gas Chromatograph for the analysis of H_2 (20%), N_2 (45~60%), CH_4 (10%), CO (30%), CO2 (20%), & N_2O (2%),

Please send offers, ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE. The validity of the bid should be at least four months (120 days) or more from the date of opening of this tender. Please ensure that your quotation reaches not later than 29.10.2010 at 16:30 hrs at the following address:

Dr. H. Raheman, Professor,
Agricultural and Food Engineering Dept.
Indian Institute of Technology, Kharagpur.
Kharagpur – 721302

Earnest money of Rs. 40,000/- is to be deposited in the form of Account payee Demand Draft in favor of IIT Kharagpur, payable at Kharagpur, India. Any Bid which is not accompanied with an EMD shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

Tender Reference	IIT/AGFE/ENQ/PGR(HR)/5/2010-11
Price of Tender Document	NIL
Last Date and Time for submitting the tender document	29.10.2010 16:30 Hrs (Indian time)
Last Date and Time for receipt of tender offers	29.10.2010 at 16:30 Hrs.
Time and Date of Opening of tender offers	Will be informed latter
Place of Opening tender offers	At the Department of Agricultural & Food Engineering, Indian Institute of Technology Kharagpur, West Bengal, INDIA, PIN-721302
Address of Communication	As stated above
Contact Telephone Numbers	Phone: +91 - 3222 - 283160 (O)
E-mail:	hifjur@agfe.iitkgp.ernet.in

DETAILED SPECIFICATION OF THE EQUIPMENT

Gas Chromatograph for the analysis of H_2 (20%), N_2 (45~60%), CH_4 (10%), CO (30%), CO2 (20%), & N_2O (2%),

Sl No	DESCRIPTION	QTY
1	**Basic unit (Totally Microprocessor Controlled Unit)**	
	Provision to mount single column, dual column or up to four column injection / detection systems as per specific requirements.	
	Oven temperature rated from -150°C to 500°C with microprocessor temperature controller +/- 0.05°C uniform temperature in the column oven with circulating fan of heavy blast. Temperature readout provided on Graphical LCD display with selector keys for oven, Injection port, Detector port and Auxiliary device. Microprocessor temperature programmer with heating rate 0.1°C/Min to 50°C/Min. Maximum temperature cut-off with cooling initiation. Column temperature can be set in 1°C steps from -150°C to 500°C and program rates in steps of 0.1°C/Min with holding time from 0 to 200 Minutes in steps of 0.01Min. Proportional temperature control for heating injection ports, Detectors and any auxiliary device. Injection ports rated from ambient to 450°C. Column operation less ambient possible by optional cryogenic accessory.	
	Provision for automatic cooling through stepper motor controlled vents without door opening with fast cooling rate. Automatic programming of runs with preconditioning time, selected initial and final temperatures, programming rate and cooling Multicycling operation provided.	
	Pneumatic System consists of Pressure Regulators & gauges, setting of pressure and flow by adjusting the pressure regulators. Restrictors are in Hydrogen & Airlines.	
	Features: ➢ Frontal keyboard for easy accessibility ➢ Graphical 320 x 240 Back lit LCD display ➢ User-friendly soft keypad with 32 keys. ➢ Menu driven user-friendly software for ease of setting. ➢ Complete control of detector parameters through software settings. ➢ All detector parameters viz. Range, polarity, detector current etc can be set through keyboard. Detector flow can be set through keyboard. Zeroing facility for detectors. ➢ Auto diagnosis user selectable ➢ Pressure & Flow Control: Through individual Pressure Regulators. ➢ Oven Fan ON/OFF: Improved Fan On/Off as well as READY signals. ➢ IQ/OQ/PQ: the qualification standards, provided in document. ➢ Alarm signals: Easy to interact with machine. ➢ Keyboard Lock: Facility to lock the keyboard to avoid changes in the method parameters during the analysis, along with password protection. ➢ Improved user safety protected oven heater assembly with protective net.	
	General specifications (Basic Unit):	
	1. Oven: Stainless Steel size internal dimensions 300mm (H) x 290mm (W) x 260mm (D) approx. 2. Temperature: 5°C above ambient temperature to 500°C adjustable in step of 1°C. 3. Temperature Control: Microprocessor proportional temperature control accuracy +/- 0.05°C. 4. Temperature Programming: 0.1°C/Min to 50.0°C/Min in steps of 0.1°C/Min. 7 Ramps and 8 Plateaus. Methods can be linked to have virtually unlimited Ramps. 5. Time Events: 8 events with On-Off status. 6. Method Files: 50. 7. Auxiliary Temperature Control Zones: 2. 8. Auto-Diagnosis: Checks, corrects operations and status of GC control, CPU, ROM, RAM, Temperature Sensor, Keyboard etc. 9. Cooling: 5 minutes from 400°C to 50°C at 22°C room temperature. 10. Temperature Upper Limit: Software adjustable from –150°C to 500°C cut –off. Independent high temperature protection, factory preset at + 465°C. 11. Humidity: 50 to 60%. 12. Operating Voltage: 230VAC ±10%, 50 Hz at @15Amps. 13. Operating Temperature: 0°C to 55°C.	

2	**Injection Ports**:	
	Two Nos. Packed Injection Port Packed Column Injection Ports are to be designed to accept 1/8" fitting and 1/4" O.D packed Columns. Injection Port Temperature: Up to 450°C.	1Set
3	**Detector:**	
	Thermal Conductivity Detector with Control Module TCD block should be made of stainless steel with Gow-Mac Tungsten Rhenium Filaments. Detector designed for fast response mounted in separate stainless steel housing complete with heating and resistance thermometer as sensor with proportional electronic temperature controller using microprocessor control. Constant filament temperature mode of operation, stabilized power supply and other electronics incorporated in TCD control unit. TECHNICAL DATA : Type: Constant Voltage Current: can be set through keyboard, Maximum 300maA with automatic Protection. Sensitivity: 10uv/ppm for C9 Hydrocarbon for X 1 range.w.r.t temperature. Filament Current: 0 -300Ma,setting through keyboard Temperature Control Range: ambient to 450^0C maximum. Output: To Recorder 10mV or 1mV as required. Filament Protection: Built in cut off for excess filament current. Pressure cut off switch for carrier (Optional) Linear Dynamic Range : Better than 10^4 Preamplifier Range: X1,X10 Output: 1V DC. 0 to 1 V DC.	2Nos
4	**Auxiliary Pneumatic Line for 2nd TCD**	1Set
5	**Essential Accessories** 5 µl liquid Syringe, S. S. Pipes for gas connectors; Nuts & ferrules for S. S. Pipes; Spanner & Soap bubble flow meter; Ball rubber; Clamp molecular sieve filter; Connector bulls eye; Ferrule al/brass 1.6mm; Ferrules front & back brass 1/8"; Ferrules brass front & back 1/4"; **Filter molecular sieve**; **Filter activated carbon**; **Filter Oxytrap** Gas lighter electronic; Fuse glass small 3.5, 1 & 1.5 AMP; Plug al.dbb; Washer Teflon 9.5 x 6 x 1; Nut nipple flow measurement; Cover dust screen; Nut brass, Toshlock 1/8"; Nut wide connector with bush; Nut 6MB blind (W/O Hole); Septum rubber 11.5 mm; Splitter for servo air; Tube PVC small for flow measure & Tube latex; Tube PVC bid for flow measure; Tube S. S. 1/8" & Catheler No. 6; Screw driver set; Cylinder key & Nut driver 8 mm; Service manual & Instruction manual; Allen key 1.5, 2, 2.5, 3, 4 & 5 mm; Adjustable wrench 12"; Nose Plier internal & external circlip. Carrier Gas Supply pipe- 5m (1 set). Air Pipe -2 m & 1 m -1 Set, H2 gas supply pipe – 2 m (1Set)	1Set
6	**Quad Channel Chromatography Integration Software**	1No
	Windows based software with Interface Card & Connecting Cables **Specifications:** 32-bit software for acquisition and processing of chromatographic data. Operating System: Windows 95, 98, Me, NT, 2000, XP. Program Type: Multi-windows multi-user application. Data Acquisition: Independent of other activities proceeding in Windows. Number of Independent Measurements: 1 to 4. Internal Converter: A/D PCI card INT7. User Configurability: High. ***Direct Chromatograph Control: Permanently extended series.*** Long File Names: Yes. Support to Automate Measurement: High. Data Import: ASCII and AIA built-in conversion module. Export: ASCII, AIA, DBF built-in conversion module. Logging Chromatogram Modifications: Automated, all operations. Logging the Activity of the Station: Yes. Access Control: Password can be customised.	

7	**Heated Box for Sampling Valves (To place three valves)**	1Set
8	**Sampling Valves :**	
	a) 10 Port Gas Sampling with actuator	1No
	b) 6-Port Valve with actuator - can withstand 300^0 C	1No
	c) 8 Port/10 Port Gas Sampling & Back Flush Valve	1No
	d) Gas Sampling Valve loop blazed with nuts & ferrules – 1 ml, 5ml - one each.	1Set
9	**Columns**:	
	a) Porapack N 8′x 1/8″ I.D S.S Column - 1No b) Molecular Sieve 5A, 8′x1/8″ I.D S.S Column - 2Nos c) Sperocarb 8′x 1/8″ I.D S.S Column - 1No	1Set
10	**Syringes (SGE Make)**	
	5 ml Gastight Syringe	2Nos
	100 ml Gastight Syringe	2Nos
11	**Essential Pre-requisites**	
a)	IOLAR Grade II H_2 Gas Cylinder 47 Lit. water capacity (99.99% purity)	1No
b)	IOLAR Grade II Argon Gas Cylinder 47 Lit. water capacity (99.99% purity)	1No
c)	IOLAR Grade II Zero Air Cylinder 47 Lit water capacity. (99.99% purity)	1No
d)	Double Stage Pressure Regulator for Hydrogen Gas Cylinder	1No.
e)	Double Stage Pressure Regulator for Zero Air Gas Cylinder	1No.
f)	Double Stage Pressure Regulator for Nitrogen Gas Cylinder	1No.
g)	**5 KVA Servo Controlled Voltage Stabilizer**	1No.
h)	**Computer Configuration (Compaq/HP/DEL)** • Core 2 Quad Processor Q2800 Intel X48 Chipset. • **2 GB** SDRAM. **200 GB HDD**.. • 18.5" TFT Monitor. CD/DVD COMBO Drive. . • 7 USB 2.0 Ports with 2 in front. 1 Mouse Port. • USB Keyboard and Optical Mouse. • Windows XP Professional (Preloaded), **Mono Laser Printer –A4**	1 No.
12	**Calibration Gas Can 0.5Lit. Water capacity containing standard gas mixture**	3 Sets
13	**Filtering unit for removal of tar from the gas to be sampled**	1 set
14	**Tedler bag - 1 litre capacity for sample collection**	3 Sets

IMPORTANT INSTRUCTIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "F.O.B. INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-

i) Ex-Works Price
ii) Packing & Forwarding
iii) Freight
iv) Any other relevant expenses.
v) Taxes payable by the Institute

Insurance will be paid by our Institute separately and should not form part of the quoted price.

2. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY) AND NOT IN **FE.** PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.

3. MEASUREMENTS/WEIGHT: NETT/GROSS OF THE CONSIGNMENT AND ESTIMATED AIR FREIGHT CHARGES FROM YOUR INTERNATIONAL PORT TO KOLKATA (INDIA). IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS – PLYTO – SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).

4. ESTIMATED SEA-FREIGHT (IF APPLICABLE) CHARGES FROM YOUR F.O.B. SEAPORT TO KOLKATA SEA-PORT, INDIA.

5. YOUR BANKER'S ADDRESS.

6. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.

7. OURS BEING A GOVERNMENT OF INDIA ORGANISATION, WE PREFER "SIGHT DRAFT" TERMS OF PAYMENT. PLEASE CONFIRM ACCEPTANCE OF THE SAME. NO ADVANCE PAYMENT. L/C IN EXCEPTIONAL CASES ONLY.

8. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL.

9. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.

10. THE SUPPLIER SHALL PROVIDE A COPY OF THE INSURANCE POLICY ALONG WITH INVOICE TO THE PURCHASER WHO MAKE ARRANGEMENTS TO EXTEND THE VALIDITY OF THE POLICY, IF NECESSARY.

(A) THE SUPPLIER SHALL INITIATE AND PURSUE CLAIM TILL SETTLEMENT, AND

(B) PROMPTLY MAKE ARRANGEMENTS FOR REPAIR AND / OR REPLACEMENT OF ANY DAMAGED ITEM (S) IRRESPECTIVE OF SETTLEMENT OF CLAIM BY THE UNDERWRITERS.

11. FOREIGN SUPPLIERS ARE REQUESTED TO SEND THEIR OFFER INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT DIRECTLY TO US FOR CONSIDERATION.

12. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.

13. BANK CHARGES ON LC/SD (BOTH WITHIN INDIA AND OUTSIDE INDIA) SHALL BE TO YOUR ACCOUNT.

14. THE INSTITUTE SHALL PROVIDE THE CUSTOMS DUTY EXEMPTION CERTIFICATE AGAINST GENERAL EXEMPTION NO. 37 [NOTIFICATION. NO. 10/97-CE, DATED 1.3.1997 AS AMENDED BY 16/07 CE].

15. LIQUIDATED DAMAGES: THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.

16. PATENT RIGHTS: THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.

17. TENDERS ARE INVITED IN DUPLICATE SETS COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPES SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOPE.

18. PRICE BIDS WILL BE OPENED ONLY FOR THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE BEEN FOUND TO BE ACCEPTABLE.

19. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL BE INVITED FOR PARTICIPATION IN THE PRICE BID. OPENING DATE AND TIME OF WHICH WILL BE CONFIRMED LATER ON.

20. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.

21. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BIDS HAVE NOT BEEN ACCEPTED BY THE INSTITUTE.

22. PERIOD OF VALIDITY: BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.

23. CONDITIONAL OFFER WILL NOT BE ACCEPTED.

24. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.

25. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

A) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES AND PAN NO.

B) BANKER'S SOLVENCY CERTIFICATE

C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			
RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

26. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO PROF. H. REHEMAN, DEPARTMENT OF AGRICULTURAL & FOOD ENGINEERING, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302 AND ACKNOWLEDGEMENT TO BE OBTAINED.

27. THE PERSON / OFFICER SIGNING THE TENDER / BID DOCUMENTS SHOULD BE DELEGATED WITH AN APPROPRIATE POWER OF ATTORNEY (DULY ENDORSED BY A NOTARY PUBLIC) BY THE CHIEF EXECUTIVE OFFICER OF THE COMPANY TO SIGN SUCH DOCUMENTS.

28. WARRANTY / GUARANTEE: THE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR 12 MONTHS AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED AT THE FINAL DESTINATION AS INDICATED ABOVE.

IMPORTANT

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.

2. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

3. For any query pertaining to this bid document correspondence may be addressed to Prof. H. Raheman, at the address mentioned above.

LAST DATE FOR SUBMISSION OF SEALED BIDS: 29.10.2010

N.B.

1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.

2) Fax, e-mail Tender will not be accepted. Duplicate Bid document must be submitted in separate closed cover.

3) General Terms and Conditions as stated above related to supply of stores / equipments /assets etc. and for specific service other terms and conditions of the Institute will apply.